OVERVIEW

• Colorado Oil & Gas Production
• Employment Changes
• Price & Production Forecasts
• State Revenue Projections
Questions?
CRUDE OIL PRODUCTION JAN 2010 – JAN 2018

U.S. vs. CO Crude Oil Production (Millions Barrels per Month)

Source: https://www.eia.gov/petroleum/production/
CO Annual Oil Production 2009 - 2017

Source: http://cogcc.state.co.us/COGCCReports/production
Colorado Oil Production 2000 to 2017

Barrels of Oil Produced

Weld
Colorado
Rest of State

Source: http://cogcc.state.co.us/COGCCReports/production
NATURAL GAS WITHDRAWALS 2000 - 2017

Natural Gas Withdrawals U.S. vs. CO

Source: https://www.eia.gov/dnav/ng
NATURAL GAS PRODUCTION SHIFT

Annual Natural Gas Production (MCF) in Colorado's Top 5 Counties - 2012 to 2017

- GARFIELD
- LA PLATA
- LAS ANIMAS
- RIO BLANCO
- WELD

Source: https://www.eia.gov/dnav/ng
Colorado Mining Sector - Continued Weeks Claimed
(Reflects Week of 19th for Each Month)

February 2018 continued claims are down 45% compared to last year and 85% compared to February 2016

Source: Colorado Dept. of Labor & Employment - UIRR
Mining Employment Rebounding, but not evenly across Colorado Counties

- 10,400 Mining Jobs lost from 2014 to 2016
  - Dampened Overall Job Growth - only 2.4% in ’16 & caused weakness in Wages - only +1.0%
- +2,000 Mining Jobs in 2017 (8.4% growth)
- 3rd Quarter Growth of 15% (3,700 jobs)

Source: CDLE / QCEW & CES
Colorado 1 Year Change in Mining Employment
Q3 2016 to Q3 2017

Employment Change
- Loss: > 100 Jobs
- Loss: 50 to 100 Jobs
- Loss: 0 to 50 Jobs
- Gain: 0 to 100 Jobs
- Gain: 100 to 500 Jobs
- Gain: > 500 Jobs
- No Data

Data: Quarterly Census of Employment & Wages, Colorado State Demography Office
Created: 04/11/2016

Source: CDLE / QCEW
## Employment Change from 2007 in Select Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Total Job Change</th>
<th>Mining Job Change</th>
<th>Total Job Change Less Mining Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesa</td>
<td>-325</td>
<td>-689</td>
<td>364</td>
</tr>
<tr>
<td>Yuma</td>
<td>-67</td>
<td>-283</td>
<td>216</td>
</tr>
<tr>
<td>Garfield</td>
<td>-1,271</td>
<td>-1,287</td>
<td>16</td>
</tr>
<tr>
<td>Cheyenne</td>
<td>-79</td>
<td>-58</td>
<td>-21</td>
</tr>
<tr>
<td>Delta</td>
<td>-400</td>
<td>-320</td>
<td>-80</td>
</tr>
<tr>
<td>Moffat</td>
<td>-529</td>
<td>-183</td>
<td>-346</td>
</tr>
<tr>
<td>Rio Blanco</td>
<td>-1,489</td>
<td>-436</td>
<td>-1,053</td>
</tr>
</tbody>
</table>

Source: CDLE / QCEW
Price, Production & Revenue Forecasts
Colorado Oil Production and WTI $/bbl 2014-17 Actual, 2018-19 Forecast

- Oil Produced (in Millions):
  - 2014: 96
  - 2015: 123
  - 2016: 117
  - 2017: 130
  - 2018: 153
  - 2019: 147

- WTI $/bbl:
  - 2014: $93
  - 2015: $49
  - 2016: $43
  - 2017: $51
  - 2018: $62
  - 2019: $60

Source: EIA, Moody’s Analytics & SDO Forecast
CO Dry Gas Production & Henry Hub $/MMBtu 2010-17 Actual, 2018-20 Forecast

CO Natural Gas Dry Production Trillion Mcf

Henry Hub Natural Gas Prices

Source: COGCC, Moody’s Analytics & SDO Forecast
State Severance Tax Formula

State Oil and Gas Severance Tax Revenue =

Production Quantity - Small Well Exemptions Quantity – Govt Owned production

X Oil or Gas Price

- Processing and Manufacturing (TPM) costs

X Tax Rate

- Property Tax Credit  (Ad Valorem)
Assessed Value from Oil and Natural Gas Production in Colorado

Source: Colorado Oil and Gas Conservation Commission, Colorado Department of Local Affairs Division of Property Taxation, and OSPB March 2018 Forecast
State Severance Tax Revenue

Source: OSPB March 2018 Forecast
State Federal Mineral Leasing Revenue

Source: OSPB March 2018 Forecast
Thank you!

State Demography Office
Department of Local Affairs
Chris Akers
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303-864-7751

https://demography.dola.colorado.gov/
Henry Hub natural gas price

Note: Confidence interval derived from options market information for the 5 trading days ending Mar 1, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Source: Short-Term Energy Outlook, March 2018, and CME Group.

https://www.eia.gov/outlooks/steo/pdf/steo_full.pdf
WTI Oil Price Forecast

West Texas Intermediate (WTI) crude oil price
dollars per barrel

- Historical spot price
- STEO price forecast
- NYMEX futures price
- 95% NYMEX futures upper confidence interval
- 95% NYMEX futures lower confidence interval

Note: Confidence interval derived from options market information for the 5 trading days ending Apr 5, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.
Source: Short-Term Energy Outlook, April 2018, and CME Group.
EIA forecasts Brent crude oil prices to average $63 per barrel this summer (April-September), $12 per barrel (29 cents per gallon) higher than last summer.
## Natural Gas Gross Withdrawals and Production

(Volumes in Million Cubic Feet)

<table>
<thead>
<tr>
<th>Area: Colorado</th>
<th>Period-Unit: Annual-Million Cubic Feet</th>
</tr>
</thead>
</table>

### Show Data By:
- **Data Series**
- **Area**

### Gross Withdrawals

### Marketed Production

Source:
COLORADO OIL AND GAS 2016
DRILLING PERMITS BY COUNTY

as of 1-1-2017

Source: